

Magnitude 7 Metals LLC

STACK SAMPLE RESULTS

POTROOM

LINE 2

Run Number 1

9/17/2019

EPA Method # 5 & 13

| | | |
|------------------------------------|----------|--------------------|
| METER VOLUME | 253.340 | CU. FT. |
| SQUARE ROOT OF DELTA P | 0.637 | SQ. ROOT IN. WATER |
| AVERAGE DELTA H | 1.528 | IN. WATER |
| METERED GAS TEMPERATURE | 96.14 | DEG. F |
| STATIC PRESSURE IN STACK | -0.41 | IN. WATER |
| STACK TEMPERATURE | 207.1 | DEG. F |
| BAROMETRIC PRESSURE | 29.70 | IN. Hg |
| PROBE TIP DIAMETER | 0.2558 | INCHES |
| GAS METER CORRECTION FACTOR | 0.992 | |
| TOTAL SAMPLING TIME | 360.0 | MINUTES |
| TOTAL WATER COLLECTED | 104.5 | GRAMS |
| MOLECULAR WEIGHT | 29.1 | LB/LB-MOLE |
| SAMPLING DUCT AREA | 196.00 | SQ. FT. |
| TOTAL PARTICULATE COLLECTED | 0.0708 | GRAMS |
| GASEOUS FLUORIDE COLLECTED | 0.02999 | GRAMS |
| PARTICULATE FLUORIDE COLLECTED | 0.01072 | GRAMS |
| TOTAL FLUORIDE COLLECTED | 0.04071 | GRAMS |
| AVG ALUMINUM PRODUCTION RATE | 455492 | LBS./DAY |
| VOLUME GAS SAMPLED | 237.755 | SCF |
| MOISTURE IN STACK GAS | 2.027 | % |
| VELOCITY OF STACK GAS (ACTUAL) | 2423 | FT./MIN. |
| VOLUMETRIC FLOWRATE IN DUCT | 365213 | SCFM |
| PERCENT ISOKINETIC - TRAIN TO DUCT | 99.31 | % |
| TOTAL PARTICULATE CONCENTRATION | 0.0105 | GRAMS/SCM |
| TOTAL PARTICULATE CONCENTRATION | 0.00460 | GRAINS/SCF |
| TOTAL PARTICULATE EMISSION | 14.39 | LBS./HR. |
| TOTAL PARTICULATE EMISSION | 1.52 | LBS./TON |
| GASEOUS FLUORIDE CONCENTRATION | 4.454 | MG./SCM |
| GASEOUS FLUORIDE CONCENTRATION | 0.001947 | GRAINS/SCF |
| PARTICULATE FLUORIDE CONCENTRATION | 1.592 | MG./SCM |
| PARTICULATE FLUORIDE CONCENTRATION | 0.000696 | GRAINS/SCF |
| TOTAL FLUORIDE CONCENTRATION | 6.046 | MG./SCM |
| TOTAL FLUORIDE CONCENTRATION | 0.002642 | GRAINS/SCF |
| TOTAL FLUORIDE EMISSION | 8.271 | LBS./HR. |
| AVG. ALUMINUM PRODUCTION RATE | 9.49 | TON/HR. |
| TOTAL FLUORIDE EMITTED | 0.872 | LBS./TON |

Magnitude 7 Metals LLC

STACK SAMPLE RESULTS

POTROOM

LINE 2 DC

Run Number 2

9/18/2019

EPA Method # 5 & 13

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|------------------------------------|----------|--------------------|
| METER VOLUME | 247.275 | CU. FT. |
| SQUARE ROOT OF DELTA P | 0.615 | SQ. ROOT IN. WATER |
| AVERAGE DELTA H | 1.406 | IN. WATER |
| METERED GAS TEMPERATURE | 91.89 | DEG. F |
| STATIC PRESSURE IN STACK | -0.41 | IN. WATER |
| STACK TEMPERATURE | 200.7 | DEG. F |
| BAROMETRIC PRESSURE | 29.70 | IN. Hg |
| PROBE TIP DIAMETER | 0.2558 | INCHES |
| GAS METER CORRECTION FACTOR | 0.992 | |
| TOTAL SAMPLING TIME | 360.0 | MINUTES |
| TOTAL WATER COLLECTED | 88.8 | GRAMS |
| MOLECULAR WEIGHT | 29.0 | LB/LB-MOLE |
| SAMPLING DUCT AREA | 196.00 | SQ. FT. |
| TOTAL PARTICULATE COLLECTED | 0.0642 | GRAMS |
| GASEOUS FLUORIDE COLLECTED | 0.01896 | GRAMS |
| PARTICULATE FLUORIDE COLLECTED | 0.01030 | GRAMS |
| TOTAL FLUORIDE COLLECTED | 0.02926 | GRAMS |
| AVG ALUMINUM PRODUCTION RATE | 455492 | LBS./DAY |
| VOLUME GAS SAMPLED | 233.759 | SCF |
| MOISTURE IN STACK GAS | 1.757 | % |
| VELOCITY OF STACK GAS (ACTUAL) | 2331 | FT./MIN. |
| VOLUMETRIC FLOWRATE IN DUCT | 355641 | SCFM |
| PERCENT ISOKINETIC - TRAIN TO DUCT | 100.27 | % |
| TOTAL PARTICULATE CONCENTRATION | 0.0097 | GRAMS/SCM |
| TOTAL PARTICULATE CONCENTRATION | 0.00424 | GRAINS/SCF |
| TOTAL PARTICULATE EMISSION | 12.92 | LBS./HR. |
| TOTAL PARTICULATE EMISSION | 1.36 | LBS./TON |
| GASEOUS FLUORIDE CONCENTRATION | 2.864 | MG./SCM |
| GASEOUS FLUORIDE CONCENTRATION | 0.001252 | GRAINS/SCF |
| PARTICULATE FLUORIDE CONCENTRATION | 1.556 | MG./SCM |
| PARTICULATE FLUORIDE CONCENTRATION | 0.000680 | GRAINS/SCF |
| TOTAL FLUORIDE CONCENTRATION | 4.420 | MG./SCM |
| TOTAL FLUORIDE CONCENTRATION | 0.001932 | GRAINS/SCF |
| TOTAL FLUORIDE EMISSION | 5.888 | LBS./HR. |
| AVG. ALUMINUM PRODUCTION RATE | 9.49 | TON/HR. |
| TOTAL FLUORIDE EMITTED | 0.621 | LBS./TON |

Magnitude 7 Metals LLC

STACK SAMPLE RESULTS

POTROOM

LINE 2

Run Number 3

9/19/2019

EPA Method # 5 & 13

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|------------------------------------|----------|--------------------|
| METER VOLUME | 256.893 | CU. FT. |
| SQUARE ROOT OF DELTA P | 0.629 | SQ. ROOT IN. WATER |
| AVERAGE DELTA H | 1.455 | IN. WATER |
| METERED GAS TEMPERATURE | 93.22 | DEG. F |
| STATIC PRESSURE IN STACK | -0.41 | IN. WATER |
| STACK TEMPERATURE | 204.6 | DEG. F |
| BAROMETRIC PRESSURE | 29.70 | IN. Hg |
| PROBE TIP DIAMETER | 0.2558 | INCHES |
| GAS METER CORRECTION FACTOR | 0.992 | |
| TOTAL SAMPLING TIME | 360.0 | MINUTES |
| TOTAL WATER COLLECTED | 88.9 | GRAMS |
| MOLECULAR WEIGHT | 29.0 | LB/LB-MOLE |
| SAMPLING DUCT AREA | 196.00 | SQ. FT. |
| TOTAL PARTICULATE COLLECTED | 0.0575 | GRAMS |
| GASEOUS FLUORIDE COLLECTED | 0.03709 | GRAMS |
| PARTICULATE FLUORIDE COLLECTED | 0.01011 | GRAMS |
| TOTAL FLUORIDE COLLECTED | 0.04720 | GRAMS |
| AVG ALUMINUM PRODUCTION RATE | 455492 | LBS./DAY |
| VOLUME GAS SAMPLED | 242.310 | SCF |
| MOISTURE IN STACK GAS | 1.698 | % |
| VELOCITY OF STACK GAS (ACTUAL) | 2392 | FT./MIN. |
| VOLUMETRIC FLOWRATE IN DUCT | 363009 | SCFM |
| PERCENT ISOKINETIC - TRAIN TO DUCT | 101.83 | % |
| TOTAL PARTICULATE CONCENTRATION | 0.0084 | GRAMS/SCM |
| TOTAL PARTICULATE CONCENTRATION | 0.00366 | GRAINS/SCF |
| TOTAL PARTICULATE EMISSION | 11.39 | LBS./HR. |
| TOTAL PARTICULATE EMISSION | 1.20 | LBS./TON |
| GASEOUS FLUORIDE CONCENTRATION | 5.405 | MG./SCM |
| GASEOUS FLUORIDE CONCENTRATION | 0.002362 | GRAINS/SCF |
| PARTICULATE FLUORIDE CONCENTRATION | 1.473 | MG./SCM |
| PARTICULATE FLUORIDE CONCENTRATION | 0.000644 | GRAINS/SCF |
| TOTAL FLUORIDE CONCENTRATION | 6.878 | MG./SCM |
| TOTAL FLUORIDE CONCENTRATION | 0.003006 | GRAINS/SCF |
| TOTAL FLUORIDE EMISSION | 9.353 | LBS./HR. |
| AVG. ALUMINUM PRODUCTION RATE | 9.49 | TON/HR. |
| TOTAL FLUORIDE EMITTED | 0.986 | LBS./TON |